

In The Claims:

1. (Currently amended) A processor readable medium ~~encoding~~encoded with processor executable instructions comprising a ~~at least one~~ command for a packet data modification processor,

the ~~at least one~~ command specifying a packet address for a first packet, the packet address comprising a first portion representing a pointer to a beginning of a layer of the first packet and a second portion representing an offset from the pointer, the packet address specifying a location within ~~that~~the layer of the first packet; and

the ~~at least one~~ command specifying forming, modifying or replacing ~~at least a~~ portion of the first packet, ~~located at the~~ location specified by the packet address, based on or using data derived from a second packet distinct from the command or the command ~~itself~~.

2. (Currently amended) The processor readable medium of claim 1 wherein the ~~at least one~~ command specifies forming, modifying or replacing the ~~at least a~~ portion of the first packet based on unmodified data, the unmodified data comprising data taken without modification from the second packet or the command ~~itself~~.

3. (Currently amended) The processor readable medium of claim 1 wherein the ~~at least one~~ command specifies forming, modifying or replacing the ~~at least a~~ portion of the first packet based on data taken from the second packet or the command ~~itself~~, and then modified through one or more modifications.

4. (Previously presented) The processor readable medium of claim 3 wherein the one or more modifications comprises masking the data with a mask.

5. (Previously presented) The processor readable medium of claim 3 wherein the one or more modifications comprises incrementing the data.

6. (Previously presented) The processor readable medium of claim 3 wherein the one or more modifications comprises decrementing the data.

7. (Previously presented) The processor readable medium of claim 3 wherein the one or more modifications comprises one or more arithmetic operations.
8. (Previously presented) The processor readable medium of claim 3 wherein the one or more modifications comprises one or more logical operations.
9. (Previously presented) The processor readable medium of claim 3 wherein the one or more modifications comprises deleting a portion of the data.
10. (Currently amended) The processor readable medium of claim 2 wherein the ~~at least one~~ command specifies inserting the unmodified data into the first packet without overwriting existing packet data.
11. (Currently amended) The processor readable medium of claim 2 wherein the ~~at least one~~ command specifies replacing existing data in the first packet with the unmodified data.
12. (Currently amended) The processor readable medium of claim 3 wherein the ~~at least one~~ command specifies inserting the data as modified into the first packet without overwriting existing packet data.
13. (Currently amended) The processor readable medium of claim 3 wherein the ~~at least one~~ command specifies replacing existing data in the first packet with the unmodified data.
14. (Previously presented) The processor readable medium of claim 1 wherein the first and second packets are the same.
15. (Previously presented) The processor readable medium of claim 1 wherein the first and second packets are different.

16. (Currently amended) The processor readable medium of claim 1 wherein the ~~at least one~~ command is a TTL decrement command.
17. (Currently amended) The processor readable medium of claim 1 wherein the ~~at least one~~ command is a TC increment command.
18. (Currently amended) The processor readable medium of claim 1 wherein the ~~at least one~~ command is a macro.
19. (Previously presented) The processor readable medium of claim 18 wherein the macro is a replace MAC DA/replace MAC SA/replace VLAN macro.
20. (Previously presented) The processor readable medium of claim 18 wherein the macro is a replace MAC DA/replace MAC SA/strip VLAN macro.
21. (Previously presented) The processor readable medium of claim 2 wherein the unmodified data forms a fragment of the first packet.
22. (Previously presented) The processor readable medium of claim 21 wherein the fragment has a predetermined granularity.
23. (Previously presented) The processor readable medium of claim 3 wherein the data as modified forms a fragment of the first packet.
24. (Previously presented) The processor readable medium of claim 23 wherein the fragment has a predetermined granularity.
25. (Previously presented) The processor readable medium of claim 21 wherein the fragment is one of several fragments forming the first packet.

26. (Previously presented) The processor readable medium of claim 23 wherein the fragment is one of several fragments forming the first packet.

27. (New) The processor readable medium of claim 1 encoded with processor readable instructions comprising a plurality of the commands of claim 1 for the packet data modification processor.